QUANTA

VOLUME 2 ISSUE 9   **OCTOBER 1985**

Contents

INFORMATION ON THE GROUP

Membership of QUANTA (QL Users and Tinkerers Association) is by subscription to QUANTA, the group's newsletter, which is published monthly. Membership details are obtainable from the secretary. Membership of the group is open to anyone with an interest in the Sinclair QL microcomputer.

Members requiring assistance with problems related to the QL may write to or phone: the secretary. An attempt will be made to put them In touch with a member who can help with the problem.

Workshops will be arranged from time to time in various parts of the Country.

The group maintains a software library. Most of the programmes are free to members. A library list will be published from time to time. Programmes are obtainable from the sub-librarians.

A list of members in any particular area is obtainable from the secretary.

Please send all contributions to the newsletter to the editor.

Chairman and	Secretary and
Newsletter Editor	Newsletter Publisher
Leon Heller,	Brian Pain,
8, Morris Walk,	24, Oxford Street,
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Sinclair, QL, QDOS, QLUB and ZX Microdrive are trade marks of Sinclair Research Ltd.

Quill, Abacus, Archive and Easel are trade marks of Psion Ltd.

NOTES FOR CONTRIBUTORS TO QUANTA

Quill files on Microdrive cartridge or 40 track disk (single or double sided), are preferred. Cartridges and disks will be returned ASAP.

Printed contributions are acceptable. They should be printed on A4 paper, using a fresh ribbon. Do not fold the sheets, but keep them flat when posting. Short letters and articles may be handwritten, but please write legibly.

Short programmes can be included, but lengthy programmes should be placed in the library, and a description sent in for the newsletter.

EDITORIAL

You should have received the provisional programme for the MK November workshop by now. It should be a very enjoyable weekend, with something for everybody. Milton Keynes has many other attractions, such as the largest shopping centre in Europe, a herd of concrete cows, a concrete dinosaur, a Buddhist temple and a 10 screen cinema and leisure complex in the process of construction.

Motorola are considering using QLs for their 68000 assembly language training courses. They rang us for some advice on the various assemblers and monitor/debuggers. They are also looking at the Atari.

The amended Copyright Act is now law. Computer programmes are officially "literary works" (!), and unauthorised copying is, I believe, a criminal offence. In future, any members attending meetings organised by QUANTA will be required to sign a statement that they will not copy or permit to be copied any software subject to copyright. Members will be summarily dismissed from the meeting and their membership will be rescinded, if they are caught copying software, or allowing it to be copied. You have been warned.

ICL chairman Robb Wilmot has resigned from the Sinclair board, and presumably will now have no further involvement with Sir Clive's pet wafer scale integration project. If he is wise, Sir Clive will give up his involvement with this project as well, in my opinion.

Sinclair's showpiece Willis Road establishment is to be closed, some staff will be made redundant, and the remainder will move to the Metalab site.

Now for a bit of good news! The price reduction has apparently had a tremendous effect on QL sales. The local Dixon's manager told me that he was out of stock, and reckoned that he could sell a hundred machines in the next couple of days, if he had them! Several independent dealers are having problems getting machines, as well.

We did very well at the PCW show, and signed up about 100 new members. My thanks to those members who helped on the stand. Before the recent subscription renewals went out, we had about 1300 members. Brian tells me that renewals are coming in at the rate of about seven a day, which is quite satisfactory. We'll be sending a letter to some of those members who don't renew, asking why, with an S. A. E., so that we can find out what we are doing wrong, if anything.

Now that the QL seems to be taking off, and lots more people seem to be interested in getting on-line with modems, I thought I'd see what was happening with Micronet. They are not going to resurrect the QL section just yet, and the free quarter's

subscription to QUANTA members was discontinued a long time ago. However, if you buy either Inc Tandata or the bright star modem, you get the free four month's membership that they were offering to group members at one time. When we have sufficient members (say 2000) we should have enough money in the kitty to finance a computerised bulletin board for members. I envisage a dual-standard modem so that it could be used at 1200/75 or 300/300 baud, on a dedicated line. A disk-based QL will also be required.

I've been getting lots of complaints about Medic recently, over delays in shipping their expansion systems, and their "free" software, which also seems to take a long time to arrive. I raised the matter with Kris Skoglund of Medic, and he assured me that from now on they were supplying goods on a COD basis, which seems fair enough. I asked him to send me a statement for publication in QUANTA, which he promised to do, but nearly two weeks has elapsed, and I haven't received anything from him.

Leon Heller

MEMBERS' LETTERS

I feel that a mechanism should be devised so that Vol. 4 commence in January, and Vol. 3 end in December. It is obviously planned to take us to Vol. 3 No. 6. bearing in mind that there are 13 4-week periods in a year, and that items are apparently held over to next issues occasionally, it ought to be relatively straightforward to publish 12 issues from Feb. '86 to Dec. '86 - this being presumably Vol. 3.

G. O'Farrell.

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With reference to Microdrive cartridge failure, I have found that the white nylon roller that carries the tape sometimes seizes up on its plastic mounting post, usually after prolonged usage. To correct this problem, I have, on a number of occasions, drilled out the plastic post - with the aid of a metal template - and fitted a metal post in its place. The repair does not involve opening up the cartridge.

I have found that if my QL is left on for more than a few hours, the screen freezes and the keyboard no longer functions. The problem appears to be caused by overheating, and not by mains glitches. I've arranged a miniature mains fan and a 15 W bulb in series: a quiet cool draught over the back of the machine seems to keep things running for days:

John Moody,
75, Harbourne Gardens,
Wes tend,
Southampton,
Hants. SO3 3LZ.

Are any members interested in a database of computer topics? I have started one, and would appreciate contributions. I am also willing to provide information from the database.

Lars Nilsson,
Docentvagen 10 V,
951 64 Luea,
Sweden.

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Please don't advertise Chas Dillon's "Notes on Archive" as unsuitable for beginners. We may find the code difficult to follow, but the effort can only be educationally rewarding and it is sure to unlock much valuable technique.

Furthermore, Chas Dillon's after-sales service (by phone) is most patient and constructive.

Dr. Basil Lee,
31, Fairdale Gardens,
London SW15 6JW.

—----------------

My contribution is related to David Nowotnik's letter (QUANTA 2.6).

I too have made extensive use of the translate facility in Quill for use with a Brother M-1009, but I have not sacrificed any characters from the keyboard.

I have used CTRL SHIFT 1 and CTRL SHIFT 2 etc. for turning on and off the different typefaces available.

Moreover, if there were more Translate options, then I would have no trouble using all of the fonts, in all the Psion packages instead of restricting BOLD, UNDERLINE etc. to use in Quill.

There are many unused combinations available and once installed with a particular typeface, the full range of fonts would be at hand.

Meanwhile, back at the ranch... Could anyone provide a comprehensive comparison of available accounting software suitable for use in a small business looking forward to joining the VAT league and anticipating the need for stock records, valuation records and whatever else that I have not yet dreamt of?

David Howard,
258, Liverpool Road,
Preston PR1 0LY.

I read John Downie's letter (QUANTA Vol. 2 No. 7, pp 5 - 6) with considerable interest. I too have had problems in Archive with the first record deleting itself and finding others duplicated. I tried to use Archive to keep stock of my record collection with information about each song and musician on each album. I've found that I need more fields than can fit on the screen when declare them in Archive, and this seems to be when this bug comes Into being.

One of the reasons why I bought the QL is so that I can keep track of the subscribers of my magazine which I produce. Unfortunately, I find Archive dangerous and unreliable, so I have reverted to the time-honoured, manual, system of index cards.

Malcolm Smith,
Bus 26,
Astridplein 31-32,
Antwerpen 2000,
Belgium.

I have seven QL-style plugs and four sockets for disposal. Does anyone want them for their own projects? Write or phone.

Don Forbes,
35, Upland Rd.,
South Croydon,
Surrey CR2 6RE.
Tel: 01-688 5794

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I enclose for your information correspondence I am now involved in with Tandata (GEL modem for the QL) and Sinclair.

The gist of the problem is that the modem unit that Tandata supplied appears to blow the QL's serial port upon connection.

I don't know if this is a common problem, but Tandata have said that I have one of the first released units.

Alex Robertson,
12, Bude Close,
Crewe,
Cheshire CW1 3XG.

/• Another member rang me about a similar problem. I think it has been overcome. See review in this issue. LFH */.

Please tell Anthony C. Haddock that his revelation of the JS ROM "WHEN" routines rank alongside sliced bread as a great advance for civilisation.

We nave the single bit, the 4-bit nibble, the 8-bit byte.

Before its too late, why don't we develop the words for 16, 32, 64 bits. My offerings are chew, munch, gobble. I am willing to deliver £15 cheque towards any prizes you give if you reckon it's a good idea for a bit of fun amongst the membership.

Petter Finne,
PO box 40280,
Nairobi,
Kenya.

`*/ Word and long word are usually used to refer to 16- and 32-bit values. Motorola in their documentation for the 32-bit MC 68020 processor refer to a 64-bit value as a quad word. The group won't be giving any prizes, but perhaps Petter will give the £15 he mentions to someone who comes up with some good alternative names. LFH */

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The last six editions of QUANTA have just arrived. I have read them from cover to cover and have found them interesting and helpful apart from the very technical comments that I couldn't understand.

It was reassuring to read that I experienced less trouble than many with my QL. Recently the Microdrives developed an intermittent fault. Sinclair repaired the fault or replaced the drives in a few days and all is now well. Fortunately the local QL agent is most helpful and supportive. Last year I took my QL on a working trip to Saudi Arabia where it caused a great deal of Interest and envy.

As a beginner with microcomputers I made many mistakes when first using the QL. I wonder if some of the early troubles could have been caused by lack of experience as in my case.

As a writer of scientific articles and correspondence course material I make most use of Quill and Archive for storing references. As I am unable to write programmes, I am happy enough to buy what I need so the reviews in QUANTA are invaluable. At present I am looking for a spelling checker.

As Quill was rather slow on Microdrives, I purchased a CST disk drive and two 5.25" drives which have improved Quill substantially. The CST interface worked well but the handbook was poor and gave little information for beginners such as myself. You wrote that CST are willing to upgrade versions before 1.06. What are the advantages of upgrading my version 1.04? Unless the advantages are worthwhile I am a little reluctant to lose the use of my disk drives for a few days.

My next step is to buy a RAM expansion but as new ones keep appearing I will hold off until things settle down. One thing does puzzle me. The going rate for replacing the two 64k RAMS with two 256k RAMS seems to be £150. This seems to my innocent mind to be steep when according to Schofield in the Guardian a 256k RAM now costs $4 which is roughly £3.

In a future edition of QUANTA please would you be kind enough to include an idiot's guide to modems and commercial data bases. As a science writer I would like to be able to access a data base that includes scientific and biological references. Alternatively could some one who has succeeded in this tell me how to proceed.

Thanks for producing such an interesting magazine and I look forward to the next edition.

Tony Johnson,
Sodston Manor,
Narberth,
Dyfed SA67 8HB.

/*There are in fact 16 RAM chips to be replaced for a 512K upgrade. Each chip is 64K bits, not bytes.

There were a few minor bugs in the earlier versions of Tony Tebby's disk software, and I think the latest version is a bit faster in operation. LFH */

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After a year and a half of growing up with QUANTA and sharing your joys and frustrations, I must sadly inform you that its time to say goodbye.

I was extremely keen on the QL but Sinclair's marketing strategy In N. America has turned me off completely. I've done (and am still doing) enough mail order shopping with my ZX81 and I do not want to go through that same adventure again with another computer. At least in Great Britain you can buy the QL plus related software and hardware in shops.

The QL is being sold here in Canada (by mail) for the ridiculously high price of $800 (Can.). In the US, it's selling for $500 (US). Taking the US exchange rate into account, it should sell in Canada for about $675 (Can.). So somewhere along the line we're getting ripped-off.

Larry Chavarie,
1707-415, Greenview Avenue,
Ottawa,
Ontario,
K2B 8G5,
Canada

—-----------------
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I noticed the reference recently to OCR readers. As I am responsible for some office administration, I have thought for a year or so that these may have as big an impact on the office work where I am as the introduction of microcomputers and

word-processors. Unfortunately, reviews that I have read so far seem to indicate that the models at the bottom end of the market are temperamental.

I am intrigued by the recent appearance of special offers. I think it would be useful to know if QUANTA is in any way endorsing or supporting the offers. The back page offer from Printerland on the latest issue is from an apparently well-established business, and they have certainly been informative on the phone to a potential customer. At the least I would suggest that if, as publishers, you are not endorsing or supporting advertisements of this sort, perhaps for your sakes you should say so, as I am sure that a dissatisfied customer would, without any justification in law, look to the Chairman/Secretary. Personally, I am delighted to see initiative of this sort and look forward to more advertisements which I do not think will degrade or impugn your integrity in any way.

C. C. West,
18, Orchard Road,
Malton,
N. Yorkshire Y017 0BH.

/* The group accepts no liability for advertisers in QUANTA. As far as I know, this is the case for any publication, although some publishers have a voluntary scheme to reimburse readers who lose money as a result of fraud by mail-order advertisers. The special offers are not solicited by us, but obviously we are delighted that some firms make these offers to members. One of our more regular advertisers tells me that he gets a much better response per pound from advertisements in QUANTA, than in magazines like QL User. LFH */

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I am writing to you in the hope that you might be able to help us, and also to tell you what has been happening on this side of the water. In April I bought an American version QL here in Canada. The ROM version is JSU and the software version is 2.1 The machines have been running almost flawlessly, however the software is something else! Quill has every bug all of you have ever written about. Clock time on the US version is far from accurate - in a one hour period the clock loses 45 secs. - 18 minutes a day. Microdrives on my machine and several others are unreliable.

Sinclair in the US have been most helpful when we needed them, both phoning us back right away, and writing to us. We hope, of course, this will continue as one return for service has to go 4000 miles across the country and 1000 miles south, which takes anything from 10 days to four weeks FIRST CLASS!

We have a QL Users Group here for anyone in this country that might be interested and will endeavour to help any QL user who writes to us with a self-addressed stamped envelope.

The address Is :-

Okanagan QL Users Group,
RR2, Site 79, Box 10,
Summerland, B. C.,
Canada V0H 1Z0.

Colin Crawford,
1640, Scotia Street,
Penticton, B. C.,
Canada V2A 6C2.

/* Colin is definitely having problems with Quill; his first page was numbered 2, and the second was numbered 1! I have heard that the mods. performed for the US and Canadian market (involving different ULA1 and many other circuit changes) affected the video considerably, so that the machines won't work properly with a TV. Perhaps the mods, have also resulted in a compatibility problem with the Psion software. It's interesting that they have version 2.1 over there. LFH */

PROBLEM SECTION

This programme crashes the QL after it has been running for about two minutes. Can anyone tell me why?

```
100 OPEN#3, scr_ 512x256a0x0:CLS#3
110 OPEN#8, scr_256x128a0x0
120 INK#8, 0
130 PAPER#8,4:CLS#6
140 BORDER#8,15,5
150 SCALE#8,100,0,0
160 REPeat LOOP
170     FILL#8,1:INK#8,RND(0 TO 7):CIRCLE#8,RND(0 TO 149), RND(0 TO
50),RND(0 TO (2*PI)):FILL#8,0
180 END REPeat LOOP
```

John Moody,
75, Harbourne Gardens,
Westend,
Southampton,
Hants. S03 3LZ.

—-----------------

Would any members be interested in helping me in a project? I have interfaced a "pressure plate" to my QL via a 6522 VIA chip, but need someone to write an assembly language routine to input data. Any suggestions or help would be gratefully received.

Is anyone interested in Forth? I have just obtained Computer One's Forth, which seems very good. However, I will need some aid from a tutor if I am to make the most

of this package. As far as I can tell it appears to generate "stand-alone" packages which will multi-task - a little easier than assembly language!

By the way, what is a "turnkey" package (a piece of jargon I can't find in any of the computing dictionaries)?

Stephen Urry,
31,Pipers Field,
Ridgewood,
Uckfield,
E. Sussex.

/* Why not use Forth to read the values from the VIA? It should be fast enough. A turnkey package is one that the customer just switches on and is operational immediately. It usually involves both hardware and software, so that the whole thing can be installed and commissioned, and then handed over ready for use. LFH */

—------------------

I have been having great fun playing "Golf" with the programme designed by Shergold and Tose, having carefully typed the complete programme onto Microdrive.

With my Computamate Q-disk in place, I copied the programme onto disk. "Golf" loaded all right from disk, but refused to switch from "airway" to "green" - in other words it will not "putt".

Furthermore, with the Q-disk plugged in but not connected to the disk drive, the Microdrive "Golf" behaves in the same way - it will not switch to "putt" when the green is reached. Take the Q-disk out and all is well, but I do not like doing this once Q-disk is safely in place.

Can anyone tell me why? And what can be done to the programme to allow it to be played from disk?

Philip Wall,
85, High Street,
Wick,
Bristol BS15 5QQ.

—------------------

Is there anyone who can help me? I need a screen dump for a Radio Shack (Tandy) DRP-110 printer. If anyone can help please write or phone (Eve. or weekends).

D. E. Markl,
163, Thornaby Road,
Thornaby,
Stockton-on-Tees,
TS17 6LG.
Tel: (0642) 605662

I note you have printed my letter (July, page 6) re Beeb EVAL command, but you have signed me "undecipherable signature". The letter was sent with the previous application form, and all mags. have been received with the correct name and address.

I have twice written to Sinclair without success re the above command, twice written to QL User - both letters ignored. Phil Rogers of PC Weekly is the only one so far who has tried to help. His solution, within the limits of BASIC, does work, but is not the complete answer. What we are looking for is a command which can be used in the following context:-

```
INPUT Xmin, Ymax
INPUT FUNCTION f$
FOR X = Xmin to Xmax STEP .01
Y = EVAL(f$)
POINT X,Y
…
```
James Cunningham,
89n, Allanfauld Road,
Cumbernauld,
Glasgow GG7 1EZ.

/* James sent the above letter to Brian. I received the earlier letter with the undecipherable signature, from Brian, without any accompanying paperwork. Please write legibly, and send newsletter material to ME! LFH */

Using Archive 1.03ACB I had 475 records with seven fields. My attempts to make a copy of this tape have all failed and now I get an 'Incomplete file transfer' when trying to display eight of the records.

I bought Gandoff and King's QL Compendium and find that I cannot get any action from a number of the games. Should I write to the publisher?

Arthur Nunn,
6, Westholme Road,
Masham,
Ripon,
N. Yorks. HG4 4EX.

/* I see you are still using version 1 of Archive, which is full of bugs. You should upgrade to version 2. Chas Dillon has written a programme to recover corrupted Archive files, but it probably only works with version 2. It should be possible to write a programme to recover Arthur's data; can anyone help?

Personally I don't trust any printed programmes. You can try writing to the publisher of the book you mention, but I don't think you'll get a reply. LFH */

Can anyone tell me of a way to change the disk in drive 2 when using Quill without quitting and reloading Quill with a new disk in drive 2. I enquired at Psion about this but they could offer no help.

I would be very grateful if some one could suggest a way of getting into an Archive file on disk which will no longer respond to the command open or look. I enquired at Psion about this but they offered no help apart from suggesting a 'tape doctor'. Apparently tape doctor cannot be used for disk based files. On the subject of Archive, my experience is, like others, that it does not always back up files successfully.

Tony Johnson,
Sodston Manor,
Narberth,
Dyfed SA67 8HB.

/* Chas Dillon has produced a programme that can recover information from corrupted Archive files. Its available from Brian Pain. LFH */

Is is true that programmes cannot be SAVEd without names? I typed in a programme and seemed to SAVE it accidentally without a name. At least there are some 25 bytes on a cartridge without indication of what they consist of.

Why does so much whirring go on? Having just completed one or two manoeuvres, and replaced the QUILL cartridge with another, I called mdv1Name_lis and was told that Name_lis did not exist. Well and good (although Name_lis was created by the programme supposedly saving the first paragraph of this letter.) But then mdv2 began to whirr and went on whirring for half a minute. Why? It presumably had no def_tmp to deal with. No command could have disturbed it, because I had been rebuffed and it could wait quietly for the next chance to inform me that something did not exist or that some new ERROR had been committed. It seems that somewhere in the programme there are blocks of time-wasting permitted, unless this is a covert way of keeping the tapes in trim.

Does a soft RESET, like the one shown in the last QUANTA, work differently to pressing the button? E.g. does it get back the memory that is otherwise held unusable if you QUIT a PSION programme and then LRUN the BOOT programme?

Is there any good reason why the ALT key should not be programmed to function as a DELETE key? It seems quite suitable and not used for much else.

Is it possible to send link up a TV and a monitor and then send different messages to each screen? How?

Indexes. how can one index this page in QUILL, for example, or a page or Super-BASIC, in the way that the ARCHIVE programme can be indexed by means of FIND or SEARCH commands?

KEYWORDS. Is there a complete list, for SuperBASIC and for the four PSION programmes? I ask for two reasons. First, there is always the chance of choosing one for a procedure, which is frustrating, and second, there is an unused potential which is wasteful.

To date, I have bought the QL, a Printer and a good many mdv cartridges, all by mail order. This is an unusual way of purchase, in my experience, however necessary, and I feel it would be valuable to find somewhere that QL hardware and software Is regularly on display for inspection and sale. Is there such a store in existence? No one seems to advertise a wide range of QL peripherals and software as available on the spot. Does such a store exist?

M. Roberts,
19, White Horse Way,
Littlehampton,
BN17 6NH.

/*, The reset programme loses everything in memory. Using the CTRL, ALT '7' technique, to generate a non-maskable interrupt, might be used, if the interrupt was trapped with a suitable routine. I believe Alan Turnbull wrote an article on this in one of the magazines recently.

There is no way of sending different signals to the monitor and TV outlets, I'm afraid. You could however use another computer or a terminal to display different information sent to one of the serial ports. LFH */

ANOTHER-QUILL BUG

If one puts in a vertical line, on the left edge of the document, there is a risk that the QL will get locked up with an ERROR message, offering the option of escape via SPACE, which, however, loops back to the message. This may relate to the situation where the cursor sometimes sticks on the first space on a line, and SPACE will not move it, which is related to the justification and other word-processing functions.

M. Roberts,
19, White Horse Way,
Littlehampton,
BN17 6NH.

BEGINNERS SECTION

Since becoming owned by a QL, I have become very much aware how time can be eaten away without any apparent result. Like historical research, the details of programmes and the mindless data of the micro-chip can be totally absorbing and

sometimes equally useless. Sitting for half a minute every few minutes whilst Microdrives whirr away becomes not only pointless but positively masochistic. Something must be done to diminish the endless waste, but what?

Having a couple of dozen cartridges in use, it became clear that much time was spent in checking the names of programmes, to ensure that they did not get mistyped in the calling. So a programme DDANDD, to show the directories on mdv2 (dd) and mdv1 (d), became a regular. But, as with other often used little programmes, it was useful to have them quickly, i.e. on a BOOT, to call at the start.

Following from this, it seemed useful to put different BOOT programmes on the cartridges. This became standard. No 1 now has a very elaborate MEMORANDUM, no 3 a MENU, no 4 a DIR (more elaborate than DDANDD), no 10 has an EDIT that came from the last Issue of QUANTA (like many of the original ideas in all this.) No 11 has an ALARM, no 12 has the famous FASTCOPY of Rob Sherratt, no 13 has the neat little programme to utilize FUNction KEYS, no 14 has the DIGITAL CLOCK, no 15 has the BOOT_ PE from the fifth Library cartridge, no 16 has a soft RESET.

On this cartridge are a list of THINGS to be done with the QL. Another has a different DIR LIST, the Charles Dillon ARCHIVE cartridge now has an XDIR and the PSION back-ups all incorporate an optional CLOCKFACE. Does all this clutter save time? Perhaps. I hope so. But there is one big risk. If you use the regular DEF PROC s to SAVE these programmes you are always in danger of getting the wrong BOOT in place, pressing s and finding that thereafter the ALARM that you expected turns out to be your MEMORANDUM. Not too bad if you've kept copies of them, but otherwise...

Oh, and for the rest of the two dozen? I try to keep them confined to my DDANDD, so that I know where I am. But I still don't know if this all saves time. Perhaps I haven't got the time to check it...

M. Roberts,
19, White Horse Way,
Littlehampton,
BN17 6NH.

NEW FERGUSON MONITOR

For use with their TX monitor/TV, model MCO1, Ferguson can supply an adaptor called the MA15 which overcomes the overscan when used with the QL. More information on 01-807 3060.

LIMITATIONS ON 'LOCAL' VARIABLES IN SUPERBASIC

Sinclair Research have kindly informed me that the problem with Local variables referred to in my guide to AutoDraw (QUANTA 2.03, p 21) was not caused by lack of memory, but by a "known" problem. You are only allowed to name eight distinct Local variables in any procedure. If you name more than this, then the listing will become corrupted as soon as you call the procedure.

This is not in any sense a memory limitation since each of the eight variables may be an array of any number of dimensions up to the memory limit of your QL. Therefore the problem is easy to solve, once you know what it is.

Brian Torode,
Trinity College,
Dublin 2.

AUTODRAW INTERACTIVE GRAPHICS SYSTEM FOR THE QL

I have deposited with the QUANTA librarian an upgraded version 1.10 of the AutoDraw programme.

It is now possible to 'do' within 'do' to any required level: any complex image made up of other images can now be reproduced at any scale and at any position on the screen.

At Brian Pain's suggestion, I am preparing a full manual for the system. I would welcome constructive comments and criticisms from any member who has used it. There are also bound to be some bugs: Please tell me It you find any.

Brian Torode,
Trinity College,
Dublin 2.

INSTANT QL MACHINE CODE

Supercharge translates a QL SuperBASIC programme into powerful 68008 machine-code completely automatically. It supports the entire syntax of SuperBASIC, including 'extensions' to the language.

Supercharged programmes run, typically, between 10 and 20 times faster than built-in SuperBASIC; small changes to a programme can give speed-up factors of over 100 times.

The price will be around that of other QL language compilers - it will certainly be less than £80.

Simon Goodwin,
Spectral Systems,
Tel: 021-565 4292

TRANSFERRING PROGRAMS FROM MICRODRIVE TO FLOPPY

A little hint for those who want to transfer their programmes from Microdrive to floppy. The procedure is very easy provided you have the XDIR cartridge.

1. Load the XDIR programme and look for the parameters of your programmes (length and - with exec programmes - workspace).

2. Reserve enough memory and load your programme as bytes.

3. Now look with a monitor (even a simple Basic routine will do it) for 'mdv1_' and 'mdv2_'in your programme.

4. Change 'mdv1_' and 'mdv2_' to 'flp1_' or 'flp1_' and 'flp2_' (depends on the number of disk-drives that you have).

5. Save the programme either with sbytes or sexec and use the parameters that you've got from the extended directory.

With this method you can transfer nearly all programmes - except those which need "the original cartridge in mdv2_". And it's more flexible than those "automatic transfer programmes".

Wolfgang Göeller,
Rosenstr. 21,
CH 8105,
Regensdorf,
Switzerland.

REVIEW OF METACOMCO/LATTICE QL C DEVELOPMENT KIT

Lattice C has consistently done well in comparative reviews of C compilers for the IBM PC, so I was delighted to hear that Metacomco had collaborated with Lattice to put Lattice C on the QL. This review is based on a pre-release version of the package.

The package is supplied in a plastic case about the size of a large book, and comprises three Microdrive cartridges (labelled 1 - compiler phase 1; 2 - compiler phase 2 and 3 - runtime/ed/link), a 200 page A5 size manual, and an EPROM cartridge that plugs into the ROM slot at the back of the machine. The standard QL doesn't have quite enough memory to run the package, which is the main reason for the EPROM. It also contains a couple of extensions to SuperBASIC, which make the process of compilation much easier, and an additional command called "crun", which adds I/O re-direction similar to Unix. It should also prevent people making unauthorised copies.

There is a total of 18 files on the three cartridges, so you get quite a lot of code for your money. The compiler itself comprises two phases. Phase 1 translates the source file into an intermediate file, which phase 2 converts into relocatable object code, deleting the intermediate file. The relocatable object file is then linked with the runtime library, and any other libraries,

to produce a machine code file that may be EXECed in the usual manner. Metacomco's standard text editor is provided, and the official Sinclair (GST) linker.

Although the package can be used with Microdrives, disks are essential for serious use, in my opinion.

Like the Metacomco ISO Pascal, QL C uses the screen RAM, when run on an unexpanded machine.

The process of compilation is quite fast, and the compiler looks pretty efficient, in that quite small files are produced. However, by the time the programme has been linked, even a small programme ends up at around 20K. This doesn't matter too much with the 128K available in the QL, of course. The compiler does quite a lot of optimising, so the programmes produced run quite quickly. Creating one's own function library is quite easy, and if it is specified in the linker control file as a library file, only those modules needed to satisfy unresolved references are incorporated in the resultant executable file. The documentation doesn't mention the fact that with the Sinclair/GST linker, library files may be concatenated.

Error detection by the compiler is generally excellent, with the compiler usually recovering, so that dozens of additional (nonexistent) errors are not flagged, as is the case with some other compilers. What seemed to me to be an inappropriate error message was generated in some circumstances, but this was not too troublesome. Error messages are identified in English, together with an error code. A list of error messages is provided in the manual.

The compiler conforms very well to the Kernighan and Ritchie (K and R) text, and has some useful optional enhancements. For instance, comments may be nested, position-independent code generated, or all character declarations interpreted as unsigned. Options such as these are selected by appropriate command line specifiers. All the useful features of Unix C are provided, such as a macro pre-processor, structures and unions, casts, typedef, bit fields, etc.

A very extensive library is provided with all the usual I/O functions together with a lot of very powerful string functions, which would be very useful for writing a compiler or assembler. Single and double precision floating point operations are available, with all arithmetic performed in double precision, as is usual. Logs, trig. and hyperbolic functions are provided, and a whole set of random number generation functions, with the algorithms used. One can even select one's own constants for the linear congruential generator employed! The library has very little support for the QL's special features - you can't even clear the screen (QDOS trap functions are provided, and it isn't too difficult to write your own functions. I will be organising the creation of a QL support library as a group project.
Because the compiler doesn't generate assembly language, like CST's CC, in-line assembler cannot be employed. Assembly language modules may be assembled separately, and then linked into one's programme

.

One serious deficiency, in my opinion, is that no mechanism is provided for chaining programmes, as with CST's product. This would be fairly easy to add with a small assembly language programme, and I was able to run QL C programmes from a QC driver programme, which solves the problem if, like me, you have both products. However, I feel that this facility should have been provided by Metacomco.

A couple of irritating bugs were found, but, hopefully, these won't be present in the release version, so it wouldn't be fair to mention them. It was quite easy to programme round them, anyway.

The documentation was excellent, apart from a boob in one of the appendices, where the first part of an example programme was missing. A copy of K and R is also required, as the manual is not intended to teach the C language.

All in all, I was very impressed with this package, which I feel is the most significant and important piece of software yet developed for the QL. Its availability means that the QL may be used as a very low-cost development system for a wide range of machines, such as the IBM PC, Atari ST, Commodore Amiga, going right up to mini and mainframe systems. In fact, anything that has a reasonably standard C compiler. It might seem a bit expensive at just under £100, but Lattice C for the IBM PC costs around £400, and you still have to buy an editor (at least another £100) as the one supplied with the PC isn't very usable.

As QL C is a new product, there is no discount to QUANTA members at present.

Leon Heller

QL TOOLKIT BUG

The disc corruptions I mentioned in the last issue can also be produced by the QL Toolkit FBACK utility, if one is copying files from one disc to another and the source disc contains a zero-length file. The destination disc will then be corrupted as described. Sinclair have been informed of this and they tell us that the bug has been found and fixed.

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MEDIC SYSTEM - A SHORT REVIEW

I was one of the first lucky ones to receive the Medic expansion system. Here is a short summary.

Performance of the hardware is excellent. Even excessive use didn't warm up the metal-cased PSU with its drives which promises good long term reliability. For those who can use a soldering iron, the PSU has enough capacity to power QL also, but you must add a 12 V (don't need 15V) transformer. (A flat one can be placed In the unit.) The Medic PSU has an inbuilt mains filter to suppress spikes.

The main features of the system are very good: besides the amazing speed you get the ability to format RAM disks of any size - provided you have enough memory. The second new command you get is for emulating mdv. Just create a boot programme with the command flp use mdv. All software that used mdv now will access flp. You need not change your programmes, they will run as they are.

The interface allows the addition of up to 512K of memory to the QL. I ordered this option and I'm very happy with it. But be warned: Tandata's Q-connect WILL NOT RUN at the moment. Their programme is not relocatable. The trick that made run Psion's chess doesn't work. Unfortunately the interface case was not ready when I got it (I'm still waiting). The feature of a flashing yellow LED that indicates memory-access might be of some use - but I don't know for whom.

Unfortunately Medic placed their voltage-regulator on the Interface so the Interface with PCB will get as warm as the QL - not too bad, but it could be improved.

The interface itself performs well. On the whole the hardware is good value for money and good quality
.

One bug it shares with most other systems: after a reset flp1_ will run till it finds a disk.

About the free software and the manual I can say nearly nothing. The convert programme works with the Psion programmes. Even M-Switch works it allows you to switch between the Psion programmes - ideal for data transfer between say Archive and Easel).

But, as I got it in August, I've got a pre-production unit which means the software and the manual are not ready. Medic promised that they will deliver them as soon as they are ready
.

Medic's customer support service seems to be excellent. One drive or Dane Kurth - she also got the Medic system - didn't work. She got a new drive (in Switzerland!) within ten days and was asked to send the faulty one back to Medic. Remember that most suppliers ask you to send back the whole unit and to wait (perhaps 28 days!) till you get a replacement.

As you can see, I'm really happy with my system. To be fair concerning the (hopefully) soon to arrive software that is missing), look at the cost of the whole unit - who else gives you additional free software. The hardware itself is reliable and fast, even without the additional software to come.

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Regensdorf,
Switzerland.

METACOMCO EDITOR BUG

This editor cannot save a file to disc, giving a "failed to open" message, although it manages to read an existing file from disc. The save command fails, however, after deleting the original file from the disc! So one has to save to Microdrive and then copy to disc.

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/* I've never had any problems saving files to disk with the Metacomco editor, and I've not heard from any other members having problems! */

QL ARTIST

I have recently submitted some of my programs into the QUANTA library, which shall be appearing in future QUANTA cartridges. All but one are games, which use the sprite routine by Richard Cross, in the APRIL '85 issue of QL USER. The list is given below :-

STUNTMAN_bas - guide your motorbike over various obstacles.
PAIRS_bas & - computer version of PELMANISM
PAIRS2_bas
DUCKSHOOT_bas - move your sights over the ducks
HANGMAN_bas - hangman with a difference
MISSILE_bas - a version of MISSILE COMMAND
BLITZ_bas - bomb the city with your out-of-control helicopter

The main program I have submitted is ARTIST_bas. This is a sketchpad, with which various shapes can be drawn and altered, screens saved/loaded onto Microdrive/disk, and screens recoloured.

The program is easy to use, and a help menu can be called on at any time simply by pressing SPACE. The program will work well on TV or monitor, and you can switch between MODE 4/8 without loss of your drawing.

Due to the size of the program, it costs £1, and is available through the sub-librarians. Along with the program, come full instructions in a QUILL file, and an example screen.

Many thanks to Brian Davies, with whom I have had a great deal of correspondence about ARTIST, and who also helped me on the topic of printers.

Also: ADVANCED PROGRAMMING WITH THE QL by Martin Gandoff, published by Hutchinson - normally £6.95 - going for £4.

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"The Old Vicarage",
Llanblethian,
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S. Glam
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SOME USEFUL FUNCTIONS FOR THE QL C COMPILER

The otherwise excellent Metacomco/Lattice C compiler doesn't have many of the functions available in SuperBASIC - you don't even have an equivalent of the CLS command! The following functions might therefore prove useful to other members using QL C. They have been added to the C library I am maintaining on behalf of the group, if you don't feel like typing them in.

These functions were written in a hurry, and can probably be improved upon. Feel free to send in your improvements and suggestions; I'm a great believer in the concept of "ego-less" programming.

I found the random string generation function invaluable when developing a stock-control package; typing in 1000 stock records to test sorting and retrieval times isn't much fun, so I let the computer do all the work!

```
£include <flp1_stdio_h>
£include <flp1_qdos_h>
£include <flp1_math_h>
£include <flp1_limits_h>

£define BS 192
£define YES 1
£define NO 0

double drand48();

char * rand_str(), *getstr(), *string();

/*
** getstr(x, y, l, s) - position cursor, display field length
** and get string
*/

char *getstr(x, y, l, s)
```

```
int x, y, l;
char *s; {

     unsigned char c;
     int i;
     int n;

     n = 0;
     i = 0;
     prstring(x, y, string(1, '-'));
     gotoxy(x, y);
     while ((c = getch()) ! = '\N')  {
          if (c == BS)  {
               if (n > 0)  {
                    curleft();
                    putch('-');
                    curleft();
                    l- -;
                    n- -;
               }
          }
          else if (n ! = 1) {
               if (c >= ' ' && c <= 'z')  {
                    c = toupper(c);
                    putch(c);
                    s[i++] = c;
                    n + +;
               }
          }

     }
     s[i] = '\0';
     return(s);
}

/*
** prstring(x, y, s) - position cursor and print string
*/

prstring(x, y, s)
int x, y;
char *s; {

     gotoxy(x, y);
     while(*s)
          putchar(*s++);
}

/*
** gotoxy(x, y) - position cursor
*/

gotoxy(x, y)
int x, y; {

     struct REGS in, out;
```

```
        in.D0 = 0x10;        /* SD.POS */
        in.D1 = x;      /* column number */
        in.D2 = y;      /* row number */
        in.D3 = -1;
        in.A0 = (char *) fgetchid(stdout);
        qdos3(&in, &out);
}

/*
** string(l, c) - return pointer to string or characters
*/

char *string(l, c) jot 1;
int l;
char c; {

        int i;
        char s[256];

        for (i = 0; i < 1; i++)
                s[i] = c;
        s[i] = '\0';
        return(s);
}

/*
** cursen(swtch) - enable/disable cursor
*/

cursen(swtch)
int swtch; {

        struct REGS in, out;

        if (swtch == YES)
                in.D0 = 0xE;
        Else
                in.D0 = 0xF;
        in.D3 = -1;
        in.A0 = (char *) fgetchid(stdout);
        qdos3(&in, &out);
}

/*
**curleft() - move cursor left
*/

curleft() {

        struct REGS in, out;

        in.D0 = 0x13;
        In.D3 = -1;
        in.A0 = (char *) fgetchid(stdout);
```

```
        qdos3(&in, &out);
}

/*
** cls() - clear screen
** taken from an example in the QL C manual
*/

cls() {

        struct REGS in, out;

        in.D0 = 0x20;   /* function number */
        in. D3 = -1;        /* timeout */
        in.A0 = (char *) fgetchid(stdout);    /* channel ID */
        qdos3(&in, &out);
}

/*
** rand_str(n, s) - return random string of random length
** between 1 and n characters
*/

char *rand_str(n, s)
char *s;
int n; {

        int 1, i;

        1 = rnd(n);
        for (i = 0; i  < 1; i++)
             s[i] = rand_letter();
        s[i] = '\0';
        return(s);
}

/*
** rand_letter() - return random letter between 'A' and 'Z'
*/

rand_letter(){

        return((int) (26*drand48())    + 'A');
}

/*
** rnd(n) - return random integer between 1 and n
*/

rnd(n)
int n; {

        Return((int) (n*drand48()) + 1);
}
```

```
/*
** clr_line(1) - clear line
*/

clr_line(1)
Int 1; {

    struct REGS in, out;

    gotoxy(0, 1);
    in.D0 = 0x23;      /* function number */
    in.D3 = -1;        /* timeout */
    In.A0 = (char *) fgetchid(stdout);     /* channel ID */
    qdos3(&in, &out);
}
```

Leon Heller

BESPOKE SOFTWARE AT OFF THE PEG PRICES

As many members have found, Archive, whilst excellent for small data bases, runs out of steam when you get up to a few hundred records. I've developed a stock control package (written in C) for a local firm that can handle thousands of records, with very rapid access. Because the package is written in a modular fashion, I can produce similar packages to clients' specifications at relatively low cost. The techniques I've developed for file handling, data input and validation, sorting and searching, etc., are common to many other applications, such as medical records (age/sex register and repeat prescriptions), large mailing lists, personnel records, etc.

If any of you are interested in a package of this type, give me a ring on (0908) 613004.

Leon Heller

BASIC FAST LOAD PROGRAM

I'm not the author, but Lothar authorised me to contribute it to our library. It may be given to anyone. The program to create a boot-routine is also on the cartridge.

The only program that can't be "fast_loaded" is - fast_copy. Sorry. But all other Basic - programs that I've tested are now fast_loadable in 30 seconds (including the additional routine). Fload_cde adds 3 commands to BASIC: fsave, fload and flrun.

A short description follows, of how to use the commands.

If you want to convert a Basic program for fast loading:

First load flcode (exec mdvn_fload_cde).

Now load BASIC as usual. IMPORTANT: list some lines or edit one

line of your BASIC program.

Then type: open_new£n,mdv2_ PROGNAME: fsave. Don't be afraid if the saving takes longer than usual.

To load your program: create a boot program as described on the cartridge or type:

    a=RESPR(300):LBYTES devicen_fload_cde,a:
    open_in£n,device_PROGNAME: fload (or flrun)

Basic programs are saved in tokenised form. That means they are saved as bytes and are about twice as long. But when loading the bytes don't need to be translated - that's why it is much faster.

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TANDATA MODEM REVIEW

It has taken a long time for a QL modem to come out, with the financial collapse of OEL and the troubles Sinclair has gone through. The old OEL modem (now Tandata) has an opponent on the market (the Bright Star from Modem House) and this is a review of the Tandata Modem with a comparison in mind.

The modem is made up of three stacked black boxes, each being of the same design as the "box" the Microdrives are stored in on the QL. The most important box is the Q CON followed by the Q MOD and finally the Q CALL.

The Q CON (£89.95) is described as an "Intelligent, multi purpose serial interface" and is by far the best one I have seen on the market for the price. It can operate at speeds of up to 9600 baud and down to speeds of 75 baud (switchable by means of software). It is backed up by software that is loaded from Microdrive cassette, however for purposes of speed in comparison to other machines loading rate, it would be better to put the software on ROM. The physical attributes of this box, like the other parts of this package, is that it is 11.5 cm * 4 cm * 15 cm. Power from the QL power supply goes in to the Q COM and is then sent to the QL by means of a similar but shorter cable. There is an RS 232 port on the side which is connected to SER2. On the Top of the Q CALL is (when a protective plug is removed) an edge connector 5 cm long, enabling additional parts to be stacked on top.

Q MOD (£79.95) is the actual modem, and has a limited specification (1200/75 bps and 1200/1200 bps half duplex), and is therefore best used on databases such as Prestel, ICL (01 844 1401) and Acorn (0223 243642). This device when connected to the Q COM gives the connection to the telephone line, for those who wonder what the most important feature on any modem is, and therefore enables you to used the old fashioned method of telephoning by means of your fingers and the dial if you do not have Q CALL.

Q CALL (£49.95) is the device that takes your fingers away from the telephone dial and on to the keyboard allowing it to telephone for you. It will also answer any telephone calls (as long as they are computer compatible) and therefore gives you the capabilities of setting up your own public database. The whole package is wrapped up with some good software that makes Tandata proud to have their name stamped on the case.

When the boot file is loaded up the program asks you to set the date to the nearest minute and then once validated goes on to load the main program. This is a menu driven package that is easily split up into separate parts. The first is the Phonebook. This enables you to store telephone numbers as well as ID passwords on Microdrive and then load a specified book into the computer; each book is made up of pages and each page holds 12 numbers, with the data on how the computer on the other end of the line is configured (e.g. baud rate, character length, type of parity etc.). Secondly, there is an off-line utility that allows you to prepare a message using a simple text editor then save it and send it down the phone line. You can encode your message or decode a message that has been sent to you. Additionally, you can send Quill files down the line to other databases and have it used as a message file. On larger databases you may download software (if there is any), print the frames, and save them. Alternatively you can access other data bases that need a scrolling mode or use the QL as a dumb terminal. Finally the Executive part of the package is without doubt the most important to all businessmen who cannot get access to a terminal when they are away from their QL. This allows them to program the QL, through a simple language, to access a database when they are away at a specific time, save the relevant data and send messages, if need be.

All in all, this is without doubt the package that will go the furthest of all, as it is backed by Sinclair and is the cheapest (pound for pound). Alternative systems for more powerful computers, that do just as much as the Tandata modem, are at least £400, and therefore Sinclair are keeping to tradition by holding the price low for such a professional package. Watch this space for the next modem (Bright Star).

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EIDERSOFT QSPELL REVIEW

I have just bought QSPELL at the PCW fair, and have been using it very successfully. It comes in a case which has space for the three other Microdrive cartridges which the user will need, a copy of QSPELL, an adapted version of QUILL and a spare dictionary.

I have been running QSPELL in a QL with Microdrives, expanded to 256k using a memory card supplied by PCML which, by-the-way, now works faultlessly (see my previous letter).

Copying and configuring the program takes about 15 minutes in all, but one only has to do this once.

When loading, the original (in mdv2) is accessed briefly. The package seems excellent and runs very well with no major bugs that I have diskovered.

The manual though brief seems to be adequate, along with the help facility available from within the program.

The only problem I have had so far has been understanding how to use the DCOMP_BAS program which comes with QSPELL and which is used to compress a newly created dictionary.

QSPELL takes about one minute to load and displays a simple menu, giving the choice of editing a document to a file or just to the screen, and various other options. When proof reading ' with supervision ' the document scrolls up the screen and stops at every unrecognised word, allowing the word to be highlighted, for correction by Quill later, learnt or ignored. The first thing, if one does any sort of technical writing, is that QSPELL has to be taught several new words. Perhaps the least painful way of doing this is to get it to ' auto-learn ' a suitable document which one is confident has no spelling mistakes or typographical errors. The new words are automatically added to the dictionary and one can save this augmented dictionary to another cartridge, and then load it back on subsequent occasions, leaving the default dictionary on the QSPELL cartridge. Loading and saving a dictionary is quite fast. There is no doubt, however, about the most rapid means of proof-reading with QSPELL, particularly with a long document full of technical words and proper names. Forget about all the facilities -- read the document directly to the screen and ' without supervision ', one hand placed on CRTL and F5, and the other holding a pocket Dictaphone.

At the moment QSPELL is most efficiently used when one has saved up several documents to check at a single session. This will hopefully change with the development of EIDERSOFT's ' ICE ' package which will allow an updated version of QSPELL to sit in memory alongside QUILL, so that one can easily switch from one to another.

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SILICON EXPRESS DISK INTERFACE AND INTERNAL RAM EXPANSION

The QL is physically quite large and has some difficulty fighting for room on my cluttered desk. For me this ruled out the Medic Expansion System as it adds another 30% to the size of the QL.

Consequently, I welcomed the arrival of the Silicon Express disk interface "insider Board" as it is housed almost completely inside the QL. This left the problem of expansion memory as it appeared that I would need an expansion unit as well as a memory card. In my view the Simplex Q-Plus 2, which makes the QL into a letter T, is a clumsy concept.

In the September (last?) issue of QL User, Silicon Express offered a 512K memory upgrade by way of replacing the internal 64K RAM chips with 256K ones. They offered a five day service although it took ten days including the post in both directions.

I have had the expanded QL now for over a week and am very pleased with it. My QL has a half megabyte of RAM and a disk interface within its original size and without requiring an extra power supply. At £150 it also cost less than half the price of a separate 5124 card (£299) and an expansion unit (£69).

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Herts. SG9 9AY.

QCODE MODAPTOR

This handy little gadget has solved my modem problems. Months ago the late-lamented OE Limited sent me a Telemod 3 in response to my request for a complete working comms system. The Telemod 3 was only part of the deal. The other bit, the vital link between the modem and the computer, was to follow within a few days. The few days turned into a this week, next week, sometime, never situation and left me with an expensive dust-gathering paperweight on my worktop.

Now Q CODE of Abingdon has come to my rescue with a unit labelled QL MODAPTER Miracle Systems for use with Q CODE Terminal Emulator. It comes in a black version of the familiar Miracle Systems Centronic printer interface and simply plugs into the SER2 slot on the back of the QL and the RS 232 socket on the modem. Two little switches on the face of the Modaptor allow you to select 300/300, 1200/75 and 1200/1200 full-duplex baud rates (but not 1200/1200 half-duplex). The Terminal Emulator software comes on a write-protected Microdrive-cartridge. It takes care of TVs as well as monitors and lets you upload your own files or download others.

A fellow user tells me he bought the Terminal Emulator on its own so he could hook up his QL to his employer's fashionable upmarket modem - and he has high praise for the Q Code people in Abingdon who helped him back-up their software onto disc.

My own reaction has been little short of delight. Its a great thrill to log on to a bulletin Board and find a message waiting; and having a phone line with a QL and a modem is a beautiful admission ticket to a whole new world of friendly enthusiasts. There's a great camaraderie at your fingertips. Numbers are not difficult to find. Start off with the current PCW and you'll soon find most boards offer you the option of extending your directory.

Of course, to do all this you simply must have a unit that works at 300 Baud - and not all modems will do this for you. The OEL QL package didn't, which is why I opted for the Telemod 3. At least one other well-advertised product doesn't do this either. So be warned. Read the small print before you place your order.

Not that you'll be be left high and dry if you do opt for an exclusive 1200/75 system. You'll still be able to enjoy Prestel and micronet as well as some Bulletin Boards which run the 1200/75 standard. But don't expect to get onto Q Net just yet. I'm told it will need a lot more QL owners with modems before this particular facility comes into operation.

The Q Code / Miracle Systems package will do me well when that happy day arrives.

QL Modaptor with Q Code Terminal Emulator - £39.95 from:-

Q Code,
42, Swinburne Road,
Abingdon,
Oxon. OX14 2HD.
(0235 28359)

Francis Cameron.

REVIEW OF CARTRIDGE DOCTOR

If you have been in the situation of having a file that you are unable to Load off Microdrive due to the "BAD OR CHANGED MEDIUM" error message or you have just deleted the only copy of a program, then this program is for you.

It is from Talent Computer Systems, who were one of the first software houses to write for the QL. This program has been out for quite some time now but was priced at £21.95, it has now been reduced in price and is now a much better buy at £14.95.

Unlike other Microdrive Doctor programs that I have seen on the market at the moment, this one differs in that it uses Artificial Intelligence techniques, to make the program very easy to use.

This is a very good thing as trying to recover files can be a very difficult task, even if you know how the program is saved on Microdrive.

When you purchase this product you get one copy of Cartridge Doctor and a small red manual. One of the first things you are told to do is make a backup copy of the program, using the Backup routine provided.

The program uses the same type of copy protection that is getting to be the standard way of protecting software on the QL against software pirates: which is that you have to have the master cartridge in drive 2 if you want to use the program.

One thing you must do before you use the program for the first time is read the manual first. The program will ask you questions, and like the Psion programs will prompt you with a default answer. If you do nothing for about 10 seconds the program uses the default answer.

If you do not read the manual first you could be in for a shock. This may seem strange to start oft with, but once you get used to the program you will find that once you have started the program running you can leave it to get on with the hard job of recovering your lost files.

The Cartridge Doctor program is split into 5 sections and each section does a different job. They are as follows:-

1. AUTOCLONE.
This is the main recovery program which you would use if you got the "BAD OR CHANGED MEDIUM" error message.

2. PATCH FILES.
This is used to edit file blocks on screen.

3. SALVAGE SECTIONS.
This is used to recover parts of a file.

4. LIST DIRECTORY.
This is used to do a directory.

5. TRANSLITERATE.
This is used to recover corrupted Quill files.

All these are well documented in the manual and are very easy to use. You also get a couple of example programs that enable you to get the hang of the program.

You can also use AUTOCLONE to recover deleted files. If you use this program after you have deleted a program you should be able to recover it without any problems, but if you have saved other programs onto your cartridge you may find that you are unable to recover all of your lost program.

Overall, I have found this a very easy program to use and well worth the money. I would recommend it to anyone.

J. W. ROBINSON

USING QDOS TRAPS

In response to Roy Barber's problem about printing to channel 0 in the August issue of QUANTA:

In contrast to Roy Barber I have found the QDOS traps in general work very well and they make writing machine code for the QL a pleasure in that you can leave the traps to do all the mundane tasks and concentrate on the interesting bits. Routines that took weeks to write on the Spectrum in Z80 code can be run up in a couple of hours on the QL in 68000 code.

There are one or two problems with the basic CN conversion routines, the only ones I can get to work on my JM QL are CN_ITOBL and CN_ITOHL. Also care must be taken with some of the traps using a timeout. The correct way to use these traps in supervisor mode (as within an interrupt routine) is with a zero timeout and then repeat the trap if incomplete. This will work with IO_SSTRG only if channel 0 is not active ie. a basic program is running and channel 0 is not waiting for input.

An alternate method is to use the vector UT_MTEXT which does not require a timeout. This works with no problems except that if channel 0 is in use it prints to £ 1 instead.

The following assembly listing and basic program will demonstrate this and also show that almost everything is put into the key queue including function keys.

```
*demo routine to print ASCII codes to basic channel 0 * using a polled interrupt
service routine.
*(c) 1985 by Barry Ashfield (Psientific Software)


*link in interrupt routine
START           LEA         PRINT_KEYS,A1       start of print routine
                MOVEQ       £$1C,D0             (MT_LPOLL)
                LEA         INT LINK,A0         A0 = link address
                MOVE.L      A1,4(A0)            put in routine start address
                TRAP        £1                  link it in
                CLR.L       D0                  clear D0 and
                RTS                             return to Basic
INT_LINK        DS.L        1                   storage for link pointer
                DS.L        1                   storage for start_address

* start of routine which will be called about 50 times a second
*get last char typed from the autorepeat buffer system variable
PRINT_KEYS  LEA         MESSAGE,A1          A1 = print message
                MOVE.W      $2808A,D1           (SV_ARBUP)
                CMP.B       10(A1),D1           has last char changed ?
                BEQ.S       EXIT                no so exit
                MOVE.B      D1,10(A1)           else put in new char to print

* print the message to channel 0
*  ft channel 0 is in use for input then the vectors will default to chan 1
```

```
*If a basic program is running then

PRINT_MESSAGE      MOVE.L      £0,A0           basic £0 ID
                   MOVE.W      $D0,A2          (UT_MTEXT)
                   JSR         (A2)            print message

*convert the char code to ASCII and print it
PRINT_CODE         MOVE.L      £0,A0           basic £0  ID
                   MOVE.W      $2808A,D1       (SV_ARBUF)
                   MOVE.W      $CE,A2          (UT_MINT)
                   JSR         (A2)            print code value

*print a new line
PRINT_NEWLINE      LEA         NEWLINE,A1      A1 - new line message
                   MOVE.W      $D0,A2          (UT_MTEXT)
                   JSR         (A2)            do it
EXIT                RTS                        end of interrupt routine

* messages to be printed
MESSAGE            DC.W        20              20 chars in message
                   DC.B        'ASCII = / CODE = '

NEWLINE            DC.W        1               1 char in message
                   DC.B        10
                   DC.B        0               re-align to word boundary
                   END
```

```
100 REMark **************************
110 REMark * demo programme to print *
120 REMark * a keypress to channel 0 *
130 REMark * by Barry Ashfield        *
140 REMark **************************
150 RESTORE 220
160 start=RESPR(118):checksum=0
170 FOR f = start TO start+117
180 READ byte:POKE f,byte
190 checksum = checksum + byte
200 NEXT f
210 IF Checksum<>7010:PRINT "error in data":STOP
214 CALL start
215 INPUT "type any key ";any$: GO TO 215
220 DATA 67,250,0,26,112,28,65,250,0,12
230 DATA 33,73,0,4,78,65,66,128,78,117
240 DATA 0,0,0,0,0,0,0,0,67,250
250 DATA 0,60,50,57,0,2,128,138,178,41
260 DATA 0,10,103,44,19,65,0,10,32,124
270 DATA 0,0,0,0,52,120,0,208,78,146
280 DATA 32,124,0,0,0,0,50,57,0,2
```

```
290 DATA 128,138,52,120,0,206,78,146,67,250
300 DATA 0,32,52,120,0,208,78,146,78,117
310 DATA 0,20,65,83,67,73,73,32,61,32
320 DATA 32,32,47,32,32,67,79,68,69,32
330 DATA 61,32,0,1,10,0,78,117
```

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QUILL MAILMERGE IN BASIC

I note with interest of your intention of writing a Quill Merge program, QUANTA Vol. 2 issue 2 page 32.

I have just written a fairly simple BASIC program to do such. There are basically 3 steps involved.

1)   Extract from your ARCHIVE database a file consisting of the required name and address list. This is achieved by using the EXPORT command as follows:-

Export member;name$, houseno$, address$, addr2$, town$

Where the above are the names of the fields within your database. In my case, I used MEMBER as the filename.

2)   Using QUILL, write your mailing shot letter as required. Then, by using the PRINT command, save the letter to a file. In the sample program, MEMLET was the filename used.

3)   Then using the basic program MEM2, letters will be produced as required.

The method I have used, is to read into an array the Quill MEMLET (_LIS) file , noting on which line the text "Dear Member," occurs. I then read in the MEMBER (_EXT) file. The problem with this file is that each name and address set is contained within 1 record, the 1st record being the names of each field, such as follows:-

"name$","houseno$","address$","addr2$","town$"
"P.Jones"," 35","Shaftesb","ury Avenue","Newtown"

Procedures have been used to split the above record into the correct fields. The letter is printed from the array. When the line number noted above is about to be printed, the name and address of the addressee is printed, prior to this line itself. The above is repeated until the last name and address has been used. This program can be easily modified to print name and address labels.

The purpose of supplying this information is to advise you of a method, which is by no means perfect, by which mailing shots can be produced. Hopefully the basic program should be self-explanatory, although no REMarks have been used.

Please feel free to contact me if you have any queries on the methods used.

```
proc exp
rem The reason for splitting the address into 2 rem fields is that ORDER will only sort
on the 1st rem 8 characters of a particular field.
export member; name$,houseno$,address$,addr2$,town$ endproc
```

```
100 DIM a$(100,80)
110 DIM infld$(120)
120 DIM houseno$(20)
130 LET no_of_lines = 0
140 OPEN_IN £5,mdv2_memlet_lis
150 REPeat read_loop
160    no_of_lines=no_of_lines+1
170    IF EOF(£5) THEN EXIT read_loop
180    INPUT £5,a$(no_of_lines)
190    IF "Dear Member," INSTR a$(no_of_lines) > 0 THEN LET
Line_no=no_of_lines
200     PAUSE 20
210 END REPeat read_loop
220 last_line
230 CLOSE £5
240 OPEN_IN £5,mdv2_member_ext
250 INPUT £5,infld$
260 BAUD 1200
270 OPEN £6,serl
280 REPeat name_loop
290    IF EOF(£5) THEN EXIT name_loop
300    INPUT £5,infld$
310    FOR i=1 TO no_of_lines
320      IF i=line_no THEN
330        split name$
340        split houseno$
350        split address$
360        split addr2$
370        l2='"' INSTR infld$(2 TO)
380        town$ = infld$(2 TO l2)
390        PRINT £6,name$:CHR$(13)
400        h1 = LEN(houseno$)
410        REPeat houseno_tidyup
420            l1=" "INSTR(houseno$)
430            IF L1=1 THEN
440              houseno$=houseno$(2 TO h1)
450              h1 = h1-1
460            ELSE
470              EXIT houseno_tidyup
480            END IF
490          END REPeat houseno_tidyup
500          IF LEN(houseno$) < 5 THEN
510            PRINT £6,houseno$;" ";address$;addr2$;CHRS(13)
```

```
520              ELSE
530              PRINT £6,housenoS;CHR$(13)
540              PRINT £6, address$; addr2$; CHR$ (13)
550           END IF
560          PRINT £6,town$;CHRS (13)
570        END IF
580        PRINT £6,a$(i)
590       NEXT i
600     END REPeat name_loop
610     CLOSE £5
620 DEFine PROCedure split(temp$)
630   LOCal l2
640   l2="," 1NSTR infld$
650   IF l2 - 4 THEN
660     temp$=""
670     ELSE
680     tempS= infld$(2 TO l2-2)
690   END 1F
700   infld$ = infld$(l2+1 TO)
710 END DEFine split
720 DEFine PROCedure last_line
730   LOCal i
740   FOR i=no_of_lines TO 1 STEP -1
750     IF LEN(a$(i)) < 2 THEN
760       no_of_lines = no_of_lines-1
770       ELSE
780       RETurn
790     END IF
800   NEXT i
810 END DEFine last_line
820 DEFine PROCedure llist
830   FOR I = 10 TO 600 STEP 10
840     LIST £6,i
850     PRINT £6,CHR$(13);
860   NEXT i
870   PRINT "Enter new sheet of paper"
880   INPUT "Hit ENTER when ready";b$
890   FOR I = 610 TO 990
900     LIST £6,i
910     PRINT £6,CHR$(13);
920   NEXT i
930 END DEFine llist
```

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NUMBER OF DAYS BETWEEN TWO DATES

It is often desirable, when writing business software, to know how many days there are between two dates. Here are a couple of procedures which do this. I came across the algorithms in an early issue of the Amateur Computer Club newsletter. The two algorithms are nearly identical, and give the same values (for the few dates I tried), which is reassuring. The Zeller technique is quite well known, and is usually referred to as the Zeller Congruence method. Does anyone know who Zeller was?

These techniques also help to reduce storage requirements for dates, as they can be stored as a single integer. You can also find which day of week any date falls upon, at least for this century, by calculating the remainder modulo 7.

The procedures are not error trapped, and therefore need some additional work it they are to be used "in anger". I shall be translating them into C, with full error trapping.

```
110 INPUT "Dates"; dte1$, dte2$
120 PRINT schecter(dte2$) - schecter(dte1$)
130 PRINT zeller(dte2$) - zeller(dte1$)
140 :
150 DEFine FuNction schecter(dte$)
160   LOCal d$, m$, y$, m,  d,  j,    n,   y
170   d$ = dte$(1 TO  2):  m$  = dte$(3 TO  4):  y$ = dte$(5 TO 6)
180   d = d$: m = m$: y =  y$
190   IF y/4 =      INT(y/4) THEN l = 1:  ELSE l = 0
200   IF m = 1 THEN   j = d
210   IF m = 2 THEN  j = d + 31
220   IF m > 2 THEN  j = INT(30.6 * m - 32.4) + d + l
230   n =  INT(365.25  * y - .25) + j
240   RETurn n
250 END DEFine schecter
260 :
270 DEFine FuNction zeller (dte$)
280   LOCal  d$, m$, y$, m, n, d, y
290   d$ = dte$(1 TO 2): m$ = dte$(3      TO  4): y$ = dte$(5 TO 6)
300   d = d$: m = m$: y = y$ + 1900
310   IF m <  3 THEN y = y - 1: m = m + 13
320   IF m >= 3 THEN m = m + 1
330   n = INT(365.25 * y) + INT(30.6 * m) + d - 621049
340   RETurn n
350 END DEFine zeller
```

Leon Heller

COMPWARE

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